

ABSTRACT OF THE DISCLOSURE

In a roller chain transmission, the diameter D of the rollers, the outer diameter d of the pins and height H of the inner plates satisfy the relationships $0.72P \leq D \leq 0.79P$, $0.40P \leq d \leq 0.44P$, and $0.96P \leq H$, with respect to the chain pitch P . The sprocket teeth are asymmetric in that the chain entering side and the chain leaving side differ, and the radius R_1 of an arc of the tooth gap bottom, the radius R_2 of the chain entering side tooth flank and the radius R_3 of the chain entering side tooth head portion satisfy the relationships $0.505D \leq R_1 \leq 0.505D + 0.069^3\sqrt{D}$, $P - (0.505D + 0.069^3\sqrt{D}) \leq R_2 \leq P - 0.505^3\sqrt{D}$, and $0.08 \leq R_3 \leq 0.13P$. The transmission chain exhibits improved endurance and quietness, smooth operation, and resistance to elongation due to wear.